Application No. 10/665,275 Amendment dated August 24, 2007

After Final Office Action of May 24, 2007

AMENDMENTS TO THE CLAIMS

Docket No : 21064/0206584-US0

Listing of Claims:

This Listing of Claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A rotary apertured interferometric lithography (RAIL) system

comprising an interferometric tool, a rotating stage, a laser beam and a mask having an aperture

that creates a servo pattern in a master for magnetic-contact printing, wherein the master has a

feature having a size of less than 0.35 micron and a standard deviation of a period of the feature

of less than 1 nm, wherein the aperture is an arc-shaped slit, wherein the chord of the arc-shaped

slit extends substantially radially from near the center of the rotating stage to near the perimeter

of the rotating stage.

2. (Original) The RAIL system of claim 1, wherein the servo-pattern tracks a

recording-head trajectory of a hard disk drive.

3. (Original) The RAIL system of claim 1, further comprising a phase shifter that

controls a position of an interference fringe.

4-5. (Cancelled)

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6. (Currently Amended) The RAIL system of claim 51, wherein the system forms a

trackpitch determined by a wavelength of a laser of the laser beam and an incident angle of the

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laser beam.

7-19. (Cancelled)

20. (New) The RAIL system of claim 1, wherein a beam splitter splits the laser beam

into two interfering beams.

21. (New) The RAIL system of claim 20, wherein the two interfering beams interfere

and expose a photoresist to form a pattern on the photoresist.

22. (New) The RAIL system of claim 21, wherein the photoresist is chemically

developed to create the pattern with different depths in the pattern.

23. (New) The RAIL system of claim 1, wherein the laser is a 193 nm wavelength ArF

laser.

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24. (New) The RAIL system of claim 1, wherein the interferometric tool comprises

an achromatic interferometric lithography (AIL) tool.

25. (New) The RAIL system of claim 1, wherein the AIL tool is adapted to produce

a pattern having 50 nm period gratings and grids, or 25 nm lines and spaces.

26. (New) The RAIL system of claim 21, wherein the pattern has a period that is

determined by

period =
$$\frac{\lambda}{2 \sin \theta}$$

where λ is the wavelength of the laser and θ is an angle between the normal to the plane of the surface of the rotating stage and one of the two interfering beams.

27. (New) The RAIL system of claim 26, wherein the period is twice a trackpitch of the pattern, wherein the period is measured from a leading edge of one track to a leading edge of another adiacent track.

(New) The RAIL system of claim 1, further comprising a wafer with a photoresist.

(New) The RAIL system of claim 21, wherein the pattern is a checkerboard pattern.

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 (New) The RAIL system of claim 1, wherein the standard deviation of the period of the feature is less than 0.5 nm.

31. (New) The RAIL system of claim 30, wherein the feature has a size of less than 0.25

micron.